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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER	
POON, KING Y	
ART UNIT	**PAPER NUMBER**
2625	

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/940,615	CHRISTODOULOU ET AL.	
	Examiner	Art Unit	
	King Y. Poon	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 17-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 17-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/21/2006 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 5-8, 14, 15, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10143340 in view of Hisatake et al (US 5,774,356).

Regarding claim 1, JP 10143340 teaches a method of printing a document in an information technology network (Detailed Description (hereafter noted by DD) paragraph 0001) comprising at least one computer and at least one printer (DD, paragraph 0010, network contains hosts 22A-x, i.e. computers, and printer 20), the method comprising the steps of: dispatching first source data having a first printing priority to at least one printer for performance of at least one print process (paragraphs 0019-0020, in order for the first source data to be interrupted, it is inherently required in

the system to have already dispatched the first data to the printer from any host 22A-22X from paragraph 0010. In determining whether interruption occurs, a priority check, i.e. interruption demand, is performed which inherently requires priority level for each print source data), subsequent to dispatch of the first source data and prior to completion of the at least one print process, dispatching second source data having a second printing priority to the at least one printer for performance of at least one print process (paragraphs 0018-0020, second print source data is sent to the printer in order to check for an interruption status. This occurs while the first source data is under print processing, but has not been fully settled, i.e. has not completed printing), determining whether the second priority is higher than the first priority (paragraph 0018, a check for the existence of an interruption printing demand from the second host is performed. The interruption printing demand is the priority check), if the second priority is higher than the first priority (paragraph 0019, if there is an interruption printing demand, i.e. if the second print data is higher in priority that the 5rst print data), interrupting the at least one print process on the first source data (paragraphs 0019-0020, when higher priority exists, the first print data is interrupted), and performing one of: (i) storing any processed first source data on long-term storage within the network (paragraphs 0019-0020, the first print data is evacuated to, i.e. stored on, the disk unit 4, i.e. long-term storage), (ii) deleting any processed first source data from any ephemeral storage of the at least one printer to which first source data was dispatched without storing such processed first source data on long term storage within the network; and returning a message to a print manager to identifying whether (i) or (ii) has been performed (DD,

paragraph 0023-0024, a flag set to "1 " which is used to be returned to the print manager after the interrupted print job has been completed to identify the print job that has been interrupted has been stored and is now time to print the stored print job that has been interrupted).

(To review: A first host dispatches a first print job to the printer. The printing of the first print job is interrupted mid print when a second host submits a second print job with higher interruption priority than that of the first print job. Upon interruption of the first print job, the print data and print setting information of the first job are saved in external storage, i.e. performance of (i) in disk unit 4. A flag is set to high in order to indicate that interruption has occurred, and the flag is returned to the processor to identify that the print data has been stored in disk 4 such that the processor would read the stored print data from disk 4).

Although JP 340 teaches priority interrupted printing, JP 340 does not teaches assigning a value to the priority and the highest priority get to print first.

Such limitations are taught by Hisatake (column 6, lines 35-55, fig 9a, b, fig. 10).

Therefore it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified JP 340 to include: assigning a value to the priority and the highest priority interrupted print job get to print first.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified JP 340 by the teaching of Hisatake because it would have allowed multiple print jobs to be properly managed. Since processors inherently process data in numerical values, assigning a value to the priority would have

allowed the printing system to easily processing the priority by bring in the values to the ALU unit of the processor for comparison. It would also allowed the system of JP 340 to be able to function properly.

Regarding claim 5, JP 10143340 teaches a method according to claim 1 wherein the step of determining whether the second priority is higher than the first priority is determined in advance of dispatching the second source data to the at least one printer (DD, paragraphs 0020-0021. At step 5, the first print job is evacuated/moved to memory before the second print job is dispatched at steps 10 & 11. Therefore, the priority check, which determines evacuation of the first print job is done before processing/dispatching the second print job).

Regarding claim 6, JP 10143340 teaches a method according to claim 5 further comprising the step, in the event that the second priority is higher than the first priority, of dispatching to the at least one printer a command instructing the at least one printer to interrupt the at least one print process on first source data, and either to save any processed first source data, or to delete such processed first source data (DD, paragraphs 0019-0022. After checking priority and concluding a higher priority for second print data over first print data, interruption of the first print data is commanded and a command for saving the first print job data in external memory follows).

Regarding claim 7, JP 10143340 teaches a method according to claim 1 wherein the step of determining whether the second priority is higher than the first priority is determined at the at least one printer subsequent to receipt of the second source data

(DD, paragraphs 001 1-0012 & 0017. Printer CPU and controller deal with the priority step).

Regarding claim 8, JP 10143340 teaches a method according to claim 7 further comprising the step, performed within the at least one printer in the event that the second priority is higher than the first priority, of automatically executing a command instructing the at least one printer to interrupt the at least one print process on first source data, and either to save any processed first source data, or to delete such processed first source data (DD, paragraphs 0019-0022. After checking priority and concluding a higher priority for second print data over first print data, interruption of the first print data is commanded and a command for saving the first print job data in external memory follows).

Regarding claim 14, JP 10143340 teaches a method according to claim 1 wherein the print process may be a computational print process, or a print process in which data is passed through mechanical elements necessary for performing printing operations of a printer to place indicia on a medium and thereby produce a document (DD, paragraph 0022. The print process is for placing indicia on a from/medium to produce a document).

Regarding claim 15, JP 10143340 teaches a printer comprising: a print operations function including a print engine (DD, paragraph 0011, engine 2) and feed and finishing capability (DD, paragraph 0022, wherein printing on a form inherently requires feed and finish operations), a processor (DD, paragraph 001 1, CPU 62, at least one data storage medium (DD, paragraph 001 1, disk unit 4), and at least one

network port to enable connection of the printer to elements of an information technology network (DD, paragraphs 0010-0011, printer is connected to clients on network 21, which inherently requires a connection port), wherein the processor is adapted, upon receipt of an appropriate signal (paragraph 0018, signal is the interruption printing demand), to suspend a print process taking place within the printer (paragraphs 0019-0020, a first print job is interrupted mid-printing) and to perform one of the following operations: (i) save any data output by the print process upon suspension thereof on long term storage (paragraphs 0019-0020, the first print data is evacuated to, i.e. stored on, the disk unit 4, i.e. long-term storage), (ii) delete from ephemeral storage any such output data without saving such output data on long term storage. (To review: A first host dispatches a first print job to the printer. The printing of the first print job is interrupted mid print when a second host submits a second print job with higher interruption priority than that of the first print job. Upon interruption of the first print job, the print data and print setting information of the first job are saved in external storage, i.e. performance of (i) in disk unit 4), wherein the processor is adapted to run a program (DD, paragraphs 001 1-0012, CPU 6 runs the program that controls the printer controller 1, of which, paragraphs 001 7 controls the interrupt function) which: determines a priority assigned to incoming data entering the printer via the at least one network port for a first type of print processing, determines whether the priority assigned to the incoming data is higher than a priority assigned to current data undergoing the first type of print processing; and automatically executes a suspension function in the event that the incoming data has a higher priority than the current data (The rejection

follows in DD, all paragraphs, which emphasis on paragraphs 0010-0034. A first host dispatches a first print job to the printer. The printing of the first print job is interrupted when a second host submits a second print job with higher priority than the priority of the first print job. Upon interruption of the first print job, the print data and print setting information is saved in external storage, i.e. performance of (i) in disk unit 4).

Although JP 340 teaches priority interrupted printing, JP 340 does not teaches assigning a value to the priority and the highest priority get to print first.

Such limitations are taught by Hisatake (column 6, lines 35-55, fig 9a, b, fig. 10).

Therefore it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified JP 340 to include: assigning a value to the priority and the highest priority interrupted print job get to print first.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified JP 340 by the teaching of Hisatake because it would have allowed multiple print jobs to be properly managed. Since processors inherently process data in numerical values, assigning a value to the priority would have allowed the printing system to easily processing the priority by bring in the values to the ALU unit of the processor for comparison. It would also allowed the system of JP 340 to be able to function properly.

Regarding claim 17, JP 10143340 teaches a printer according to claim 15 wherein the processor is adapted to execute the suspension function upon receipt of a corresponding command via the network port (the network port of the printer receives a

command to print a job from a second host which would be a command for the CPU 6 to execute the interruption function).

Regarding claim 18, JP 10143340 teaches a printer according to claim 15 wherein the long-term storage is within the network (DD paragraphs 0010-0011, disk unit 4 is on printer in network 21).

Regarding claim 19, JP 10143340 teaches a printer according to claim 19 wherein the long-term storage is the at least one data storage medium (disk unit 4 is the storage medium for which the interrupted data is saved).

Regarding claim 20, JP 10143340 teaches a method of printing a document comprising at least one computer and at least one printer (DD, paragraph 0010, network contains hosts 22A-x, i.e. computers, and printer 20), the method comprising the steps of: dispatching first source data having a first printing priority to at least one printer for performance of at least one print process (paragraphs 0019-0020, in order for the first source data to be interrupted, it is inherently required in the system to have already dispatched the first data to the printer from any host 22A-22X from paragraph 0010. In determining whether interruption occurs, a priority check, i.e. interruption demand, is performed which inherently requires priority level for each print source data); subsequent to dispatch of the first source data and prior to completion of the at least one print process, dispatching second source data having a second printing priority to the at least one printer for performance of at least one print process (paragraphs 0048-0020, second print source data is sent to the printer in order to check for an interruption status. This occurs while the first source data is under print processing, but has not

been fully settled, i.e. has not completed printing): determining whether the second priority is higher than the first priority (paragraph: 0018, a check for the existence of an interruption printing demand from the second host is performed. The interruption printing demand is the priority check); if the second priority is higher than the first priority (paragraph 0019, if there is an interruption printing demand, i.e. if the second print data is higher in priority that the first print data), interrupting the at least one print process on the first source data (paragraphs 0019-0020, when higher priority exists, the first print data is interrupted), and performing one of: (i) storing any processed first source data on long-term storage within the network (paragraphs 0019-0020, the first print data is evacuated to, i.e. stored on, the disk unit 4, i.e., long-term storage); (ii) deleting any processed first source data from any ephemeral storage of the at least one printer to which first source data was dispatched without storing such processed first source data on long term storage within the network; and returning a message to a print manager to that effect (DD, paragraph 0023-0024, a flag set to "1" indicates the return message that is used in a main routine of the print manager).

(To review: A first host dispatches a first print job to the printer. The printing of the first print job is interrupted mid print when a second host submits a second print job with higher interruption priority than that of the first print job. Upon interruption of the first print job, the print data and print setting information of the first job are saved in external storage, i.e. performance of (1) in disk unit 4. A flag is set to high in order to indicate that interruption has occurred).

Although JP 340 teaches priority interrupted printing, JP 340 does not teaches assigning a value to the priority and the highest priority get to print first.

Such limitations are taught by Hisatake (column 6, lines 35-55, fig 9a, b, fig. 10).

Therefore it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified JP 340 to include: assigning a value to the priority and the highest priority interrupted print job get to print first.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified JP 340 by the teaching of Hisatake because it would have allowed multiple print jobs to be properly managed. Since processors inherently process data in numerical values, assigning a value to the priority would have allowed the printing system to easily processing the priority by bring in the values to the ALU unit of the processor for comparison. It would also allowed the system of JP 340 to be able to function properly.

4. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10143340 in view of Hisatake et al (US 5,774,356) as applied to claim 1 and further in view of Terao (US 6 389 121).

Regarding claim 2, JP 10143340 teaches a method according to claim 1 but do not teach the method further comprising the step, prior to the step of either storing or deleting any processed first source data, of determining how much long-term storage space is available in the network.

However, Terao teaches a memory sufficiency check that is performed when the printer has not completed the printing operation (column 9, line 56 - column 10, line 10). It checks to see if memory 9 has enough space to store the unprocessed image. If it does, it stores the image for later processing, and if it does not, it deletes it.

Accordingly, at the time of the invention, it would have been obvious to one skilled in the ad to have used the memory sufficiency check method taught by Terao in the method from claim 1 taught by JP 10143340 because it allows the functionality of checking the printer memory storage amount and holding the unprocessed/interrupted document for later processing in the memory, of deleting it from said teachings in the method taught by JP 10143340 provides a memory-saving method (see Ferao column 2, line 6 - column 3, line 13).

Regarding claim 3, the claim rejections of claim 2 are representative of claim 3. See Terao teachings wherein the method further comprising the step of determining whether the available long term storage space is sufficient to enable storage of any processed first source data and subsequent performance of the at least one print process on the second source data (column 9, line 56 – column 10, line 10, a check is made to see if memory 9 has enough space to store the unprocessed image. If it does, it stores the image for later processing, and if it does not, it deletes it).

Regarding claim 4, the claim rejections of claim 3 are representative of claim 4. See Terao teachings wherein any processed first source data is stored on long-term storage of at least one printer of the network in the event that the available storage space is sufficient, and any processed first source data is deleted from any ephemeral

storage of the at least one printer to which first source data was dispatched without storing such processed data on long term storage in the event that the available storage space is not sufficient (column 9, line 56 – column 10, line 10, a check is made to see if memory 9 has enough space to store the unprocessed image. If it does, it stores the image for later processing, and if it does not, it deletes it).

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10143340 in view of Hisatake et al (US 5,774,356) as applied to claim 1 and in further view of Kato (US 6 771 386).

Regarding claim 9, JP 10143340 teach a method according to claim 1 but does not teach wherein any processed first source data is stored on long term storage provided by a plurality of printers within the network.

However, Kato teaches a plurality of printers (fig 1 printer/copiers 3 and 4).

Accordingly, at the time of the invention, it would have been obvious to one skilled in the art to have used the plurality of printers taught by Kato in the method taught by JP 10143340 because (column 6:lines 25-35) the method taught by Kato allows for a plurality printers that can be commonly used by a plurality of users on a local network, and also has a high-speed image printing function.

6. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10143340 in view of Hisatake et al (US 5,774,356) as applied to claim 1 and further in view of Kato (US 6 771 386) & Mastie et al. (US 6 373 585).

Regarding claim 10, JP 10143340 teach a method according to claim 1 but does not teach wherein first and second source data is distributed between a plurality of printers for performance of the at least one print process, and the at least one print process includes ripping of first and second source data.

However, Kato teaches a plurality of printers that distribute print jobs (fig 1, printers 3 and 4, & column 10, lines 5-11, the job is distributed for printing on plurality of printers 3 and/or 4).

Accordingly, at the time of the invention, it would have been obvious to one skilled in the art to have used the plurality of printers taught by Kato in the method taught by JP 10143340 because (column 6, lines 25-35) the method taught by Kato allows for a plurality printers that can be commonly used by a plurality of users on a local network, and also has a high-speed image printing function.

Additionally, JP 10143340 & Kato do not combine to teach a print process that includes ripping source data.

However, Mastie et al. teach a print process with ripping (column 5:lines 42-56).

Accordingly, at the time of the invention, it would have been obvious to one skilled in the art to have used the ripping process taught by Mastie et al. in the method taught by JP 10143340 & Kato because Mastie et al-'s teachings provide a method and system for load balancing, i.e. queuing print jobs and distributing print jobs across multiple transform processes such as ripping (column 3, lines 19-30).

Regarding claim 11, JP 10143340 teach a method according to claim 10 but does not teach wherein the first and second source data are each dispatched initially to a single printer, and are subsequently distributed between a plurality of printers.

However, Kato teaches a plurality of printers that distribute print jobs from a first printer (column, lines 45-65, print job sent initially to printer/copier 3 and are, column l0, lines 5-11, distributed between the two printers).

Accordingly, at the time of the invention, it would have been obvious to one skilled in the art to have used the plurality of printers taught by Kato in the method taught by JP 10143340 because (column 6, lines 25-35) the method taught by Kato allows for a plurality printers that can be commonly used by a plurality of users on a local network, and also has a high-speed image printing function.

Regarding claim 12, JP 10143340 teach a method according to claim 10, but does not teach wherein the first and second source data is distributed between first and second pluralities of printers respectively for performance of the at least one print process, and wherein the first and second pluralities of printers have at least one printer in common.

However, Kato teaches a plurality of printers with one shared printer (column 10, lines 5-11, the job is distributed for printing on plurality of printers 3 and/or 4, wherein printer 3 and printer 4 have printer 3's control section 31 that distributes the job in common).

Accordingly, at the time of the invention, it would have been obvious to one skilled in the art to have used the plurality of printers taught by Kato in the method

taught by JP 10143340 because (column 6, lines 25-35) the method taught by Kato allows for a plurality printers that can be commonly used by a plurality of users on a local network, and also has a high-speed image printing function.

7. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10143340, Hisatake et al (US 5,774,356) & Kato (US 6 771 386) as applied to claim 12 above, and further in view of Terao (US 6 389 121).

Regarding claim 13, JP 10143340 & Kato teach the method of claim 12 but do not teach that the method further comprises the steps, prior to dispatch of the second source data of estimating which printers involved in performing the at least one print process on the first source data will have long term storage available after storage of any processed first source data upon interruption of the at least one print process on the first source data, and dispatching at least part of the second source data to at least one printer thus identified.

However, Terao teaches a memory sufficiency check that is performed when the printer has not completed a printing operation (column 9, line 56 - column 10, line 10). It checks to see if memory 9 has enough space to store the unprocessed image. If it does, it stores the image for later processing, and if it does not, it deletes it.

Accordingly, at the time of the invention, it would have been obvious to one skilled in the art to have used the memory sufficiency check method taught by Terao in the method from claim 12 taught by JP 10143340 & Kato because it allows the functionality of checking the printer memory storage amount and holding the

unprocessed/interrupted document for later processing in the memory, of deleting it from said memory to conserve space if memory sufficiency does not exist. Furthermore, the inclusion of Terao's teachings in the method taught by JP 10143340 & Kato provides a memory-saving method (see Terao column 2, line 6 - column 3, line 13).

Response to Arguments

8. Applicant's arguments filed on 2/21/2006 have been fully considered but they are not persuasive.

With respect to applicant's argument that JP 10143340 does not teach determining whether the second priority value signifies higher priority than the first priority value, has been considered.

In reply: Although JP 340 teaches priority interrupted printing, JP 340 does not teaches assigning a value to the priority and the highest priority get to print first.

Such limitations are taught by Hisatake (column 6, lines 35-55, fig 9a, b, fig. 10).

Therefore it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified JP 340 to include: assigning a value to the priority and the highest priority interrupted print job get to print first.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified JP 340 by the teaching of Hisatake because it would have allowed multiple print jobs to be properly managed. Since processors inherently process data in numerical values, assigning a value to the priority would have allowed the printing system to easily processing the priority by bring in the values to the

ALU unit of the processor for comparison. It would also allowed the system of JP 340 to be able to function properly.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to King Y. Poon whose telephone number is 571-272-7440. The examiner can normally be reached on Mon-Fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 571-272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 28, 2006

KING Y. POON
PRIMARY EXAMINER